

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-023232**Date Inspected:** 29-Apr-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Steve Jensen**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS Tower**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower North Shaft Splice #2 @Elevation 83meters:

At Northeast (B-C) corner, lower splice plate; this QA Inspector randomly observed ABF welding personnel Salvador Sandoval (#2202) continuing to perform production welding on the top half of the splice plate using the self shielded Flux Cored Arc Welding (FCAW) process. This QA Inspector observed a propylene gas torch was being used to preheat areas prior to welding. This QA Inspector observed QC Inspector Steve Jensen using an infra red temperature gauge to verify the preheat temperature of more than 300°F. This QA Inspector performed a verification of the welding parameters and observed 250 amperes and 21.4 volts with a travel speed of 95 mm per minute with equivalent heat input of 3.37 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. The welder continued fill pass fillet welding on both sides of the plate until 1500hours. Before the end of the shift, at around 1500hours, the welder has stopped fillet welding and ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

At Tower North Shaft Splice #2 @Elevation 83meters:

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At North (C-D) corner, lower splice plate; This QA Inspector randomly observed ABF welding personnel Morgan Winters perform production welding on the bottom half of the lower splice plate using the self shielded Flux Cored Arc Welding (FCAW) process. This QA Inspector observed a propylene gas torch was being used to preheat areas prior to welding. This QA Inspector observed QC Inspector Steve Jensen using an infra red temperature gauge to verify the preheat temperature of more than 300°F. This QA Inspector performed a verification of the welding parameters and observed 250 amperes and 20.0 volts with a travel speed of 90 mm per minute with equivalent heat input of 3.33 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. Welding of the vertical fillet weld was still continuing at the end of the shift and should remain tomorrow. Before the end of the shift, at around 1500hours, ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

At Tower West Shaft Splice #2 @Elevation 83meters:

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT of the fillet welded lower and upper splice plate joints. During the QA verification, the following observations were noted;

1. At Northwest (C-D) corner of upper splice plate, the top section of the bottom half vertical fillet on two sides of the plate were fillet welded disregarding 1" hold back before the interior closure plate splice.
2. ABF QC Steve Jensen has visually accepted the welded 1" hold back disregarding this same specific requirement.
3. ABF personnel have tried to grind off the welded hold back but in so doing they ground excessively into the interior closure plate leaving a cavity of at least 12mm deep.

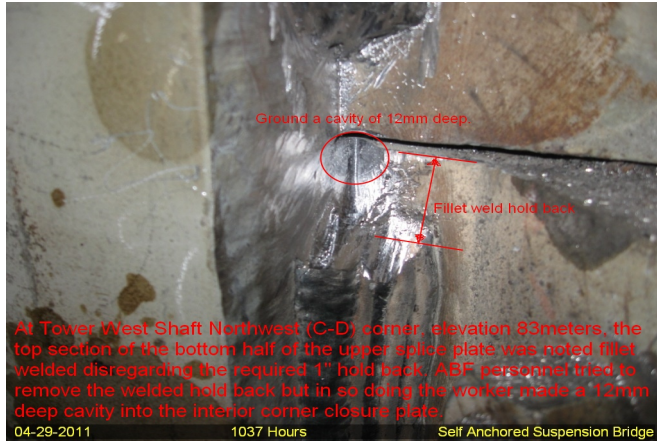


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## Summary of Conversations:

Due to the above infractions that were observed during the VT verification, an Incident Report will be forthcoming.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer